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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,890	01/28/2002	Hyung Ki Hong	2658-0274P	3023
2292	7590	02/02/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHANG, AUDREY Y	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/055,890

Applicant(s)

HONG, HYUNG KI

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Remark*

- This office Action is in response to applicant's amendment filed on November 22, 2004, which has been entered into file.
- By this amendment, the applicant has amended claims 1-7, and 9 and has newly added claims 10-12.
- Claims 1-12 remain pending in this application.
- Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korean on January 28, 2002. It is noted, however, that applicant **has not filed a certified copy** of the foreign application as required by 35 U.S.C. 119(b). The applicant is respectfully noted that **ONLY** the cover page but not the certified copy of the APPLICATION is filed.

### *Response to Amendment*

1. The amendment filed on November 22, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: **Claims 1 and 2 have been amended** to include the phrase "first pixels for a left-eye picture and second pixels for a right-eye picture". The specification only gives support for the pixels to include **both left and right eye picture**.

Applicant is required to cancel the new matter in the reply to this Office Action.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-6, and 10-11 are rejected under 35 U.S.C. 112, first paragraph**, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejections based on the newly added matters are set forth in the paragraph above.

4. **Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph**, as based on a disclosure which is not enabling, the *corresponding complementary color coding of the left eye and right eye perspective image* with respect to the *color arrangement* of the *variable color barrier* are **critical or essential** to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. The claims **must show the correspondence** between the *color coding* of the images and the *color coding of the color barrier* in order for the right eye image to go to right eye only and the left eye image to go to left eye only, as in the stereoscopic mode and **the correspondence** between the *complementary color filters* and the *left eye picture and right eye picture* to allow white light of the left eye and right picture to go to both eyes in the plane mode. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification and claims **fail** to teach how could the stereoscopic image be observed by *simply* having a variable color barrier. Claims 3-6 and 8-9 inherit the rejections from their respective based claims. The specification and the claims also **fail** to teach how could the color barrier with the alternative color filters is capable of providing plane view.

**Claim 1 has been amended to only give description of “applying first voltage, second voltage to the first and second variable filters such that left-eye picture of first and second pixels is incident to the said left eye and said right-eye picture of said first and second pixels is incident to said right eye in said**

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stereoscopic mode” and “applying a third voltage to said first and second variable filters to transmit light from said first and second pixels in said plane mode”. However the specification and the claim fail to teach how could all these possible. Firstly, the earlier part of claim 1 claims the first pixels for a left-eye picture and second pixels for a right-eye picture, then where do “left-eye picture of said first and second pixels” and “right-eye picture of said first and second pixels” come from? Secondly, in earlier part of the claim 1, the variable color barrier is to have alternative color filters of complementary colors, (i.e. a set color filters arrangement), then what do the applied first, second and third voltage have any effect on the filters and on the whole method of display the multi-mode image? By simply “applying voltages to first and second variable filters” **WILL NOT** make the left-eye and right-eye picture incident on the left eye and right eye respectively, in the stereoscopic mode, and to “transmit light from first and second pixels for plane mode”. A color selection and color matching is essential for making the different mode of display possible. In the *stereoscopic* mode, the first and second voltage applied on the first and second color filters, respectively, make the color filters have complementary color relationship. The left eye picture from the first and second pixels encoded with the same color code as the color of the first color filter will be directed and receive by the left eye, and the right eye picture from the first and second pixels encoded with the same complementary color as the second color filter will be directed and received by the right eye. In the *plane mode*, a third voltage is applied to both the first and second filters so that **NO COLOR** filtering function is present, (i.e. no more of the alternative arrangement of first and second color filters with color/complementary color present), the left eye picture and right eye picture of the first and second pixels will be all transmitted to **BOTH** right and left eyes as white light. Thirdly, the phrase “applying a third voltage to said first and second filters to transmit light from first and second pixels in said plane mode” recited in claim 1 has a wrong implication. Does this phrase means that in the *stereoscopic* mode, the light from first and second pixels does not transmit through the filters?

**Claim 2 has been amended to include** “a variable color barrier unit having first and second variable filters **alternated** with each other such that first variable filters are of a first color and a color of the second variable filters is a complement of said first color” and “a switch connected between said variable color barrier unit and said voltage source to apply said first, second and third voltages to said first and second variable filters of said variable color barrier unit in response to the mode signal”. However the specification and the claim fail to teach **how** could this arrangement is possible to provide “*multi-mode stereoscopic image displaying*”. **Firstly**, what are considered to be the multi-mode here? **Secondly**, if the multi-mode are a switch between stereoscopic and plane mode, how could **simply applying different voltages** to the color barrier unit is possible to achieve stereoscopic mode or plane mode? In particular, the color barrier seems to **always** have alternative color/complementary color filters arrangement, the different voltages do not seem to have any optical function here. It is not clear how could the **alternative color filters arrangement (color/complementary color)** of the variable color barrier be possible to provide **both** the stereoscopic mode and plane mode, what does the switch between mode really mean here? **The applicant is respectfully requested to refer to the paragraph above** concerning the **essential** color coding of the left eye and right eye pictures in the first and second pixels in correspondence to the switching of the color barrier unit between color/complementary color filters arrangements and the non-color filtering function of all the filters to achieve the stereoscopic mode and plane mode respectively.

**Claim 7 has been amended to include** a color barrier having first color filters “alternated with each other such that said first color filters are of a first color and a color of said second color filters is a complementary of said first color”. However the specification and the claim fail to teach **Firstly**, how could the color barrier is capable of achieving “such that the left-eye picture is incident to the left eye and the right eye picture is incident to the right eye of an observer” and **Secondly** how do the color barrier with alternative color filters **work with** the light scattering device to achieve the stereoscopic mode and

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the plane mode respectively. The applicant is once again respectfully noted by having a color barrier with alternatively arranged first color filters and second color filters **will not be able to achieve** either the stereoscopic view or the plane view and will not make the left eye and right eye picture incident on the left eye and right eye respectively, but **only if the left eye and right eye pictures are also color coded** correspondingly then the filters can make color filtering selection. Please refer to paragraph above for the essential working principle between the color-coding of the left eye and right eye picture and the variable color barrier with alternative color filters.

Applicant is respectfully requested to amend the claims to make it in comply with the requirements of 35 USC 112, first and second paragraphs. At this juncture the claims fail to provide a workable display apparatus.

#### *Claim Objections*

**5. Claim 1, 7-9 and 12 are objected to because of the following informalities:**

(1). **Claim 1 has been amended to include “left eye picture” and “right eye picture”** however it is not clear how do these pictures relate to “video signals” and “stereoscopic image” already present in the claim.

(2). **Claim 1 has been amended to include the phrase “said left eye picture of said first and second pixels” and “said right eye picture of said first and second pixels”** however in the earlier part of the claim, the first pixels are **only** for left eye picture and second pixels are **only** for right eye picture. Please clarify.

(3). **Claim 7 has been amended to include the phrase “a color barrier having first color filters alternated with each other”** that is confusing and indefinite since it is not clear how could the first color filters alternated with each other. What is the alternation here? Also the amended phrase “*said* second

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color filters” and “a portion of first pixels and a portion of second pixels” in claim 7 are indefinite since they each lacks proper antecedent basis, it is not clear what are these pixels.

**Appropriate correction is required.**

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-9 and newly added claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Hematite et al (PN. 5,751,479).**

The claims as indicated in the paragraphs above fail to provide adequate writings for describing a workable apparatus or for providing the **enablement** of the apparatus; they can only be examined in the broadest interpretation.

Hamagishi et al teaches a *three dimensional display* that is capable of being switched between stereoscopic mode and 2D display mode, wherein the apparatus is comprised of *a liquid crystal display device* (1, Figure 7) serves as the image display device, a *light source* (2) and *a color filter* (3), comprises different filtering regions *alternatively* arranged that each filters light in a different color that includes complementary color filter regions such as red and green, and a *polymer dispersed liquid crystal panel* (17), wherein the color filter and the polymer dispersed liquid crystal panel serve together as the *variable color barrier*. Hamagishi et al teaches when the polymer dispersed liquid crystal panel is switch *on* the color filter with the panel is switched to stereoscopic mode for directing and separating the image displayed on the liquid crystal display in such a way that left eye image reaches left eye of an observer



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and the right eye image reaches the right eye of the observer to create stereoscopic image display. When the LCD panel (17) is switched *off* the light from the color filter is combined to white light such that a 2D image display mode is presented, (please see Figures 7-8 and columns 7-8). Hamagishi et al teaches that the color filter can either be placed in front of the backlight or in front of the display device. This reference does not teach explicitly that the image signals are obtained by photographing an object at a different angle on a display unit. However such method is the most common practice in the art to obtain parallax images of an object. It would then have been obvious to one skilled in the art to modify the method accordingly to obtain the parallax images of the object photographically for the displaying of stereoscopic image. With regard to claim 7, the polymer dispersed liquid crystal panel serves as the light scattering device that is switched between a translucent state (ON state) and a scattering state (OFF state) to enable either the stereoscopic view or plane view, (please see column 7, lines 54-67).

**Claims 1, 2 and 7 have been amended** to include the feature of having first pixels for left eye picture and second pixels for right eye picture, Hamagishi et al teaches such explicitly as shown in Figure 10. With regard to the **amended feature** concerning the “left eye picture of first and second pixels” and the “right eye picture of first and second pixels” being transmitted to the left eye and right eyes respectively, Hamagishi et al also teaches such explicitly, since the pixels (1R, 1G, 1B, Figures 7 and 8), include both the right eye and left eye picture. Although this reference does not teach explicitly about the applying voltages to the color filters, however, since the claims fail to teach what are the optical functions concerning the color filters as different voltages being applied, and the claims *specifically* teaches the color barrier unit *always* has alternative complementary color filters arrangements, which is met by the disclosure of Hamagishi et al reference, such voltage application to the filters therefore cannot be examined here since it does not change anything as far as the filters concerns. However the *result* of the different voltage application for achieving stereoscopic mode or plane mode is met by the disclosure of Hamagishi et al reference as stated above.

With regard to newly added claims 10-12, and the amendments to claims 1, 2, and 7, concerning the overlapping between the filters in the color barrier unit and portions of the first and second pixels, such is explicitly taught in Figures 7 and 8 of Hamagishi et al. The exact portion of overlapping is considered to be obvious modification to one skilled in the art since it has to do with the physical distance between the display device, the size of the pixels and the size of the color filters and the modification would have the benefits of achieving best image quality, reducing cross talk and reducing the size of the display apparatus.

#### *Response to Arguments*

8. Applicant's arguments filed on November 22, 2004 have been fully considered but they are not persuasive. The newly amended claims and newly submitted claims have been fully considered and they are rejected for the reasons stated above.

Applicant's arguments concerning the newly added features in the claims have been fully considered and addressed in the paragraphs above. In response to applicant's arguments concerning the newly added features would overcome the rejections, the examiner respectfully disagrees for the reasons stated above. In short, the newly amended features introduce new matters to the claims and do not overcome the rejections concerning enablement of the claims for the reasons stated above.

#### *Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH**

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Chang, Ph.D.

*Audrey Y. Chang*  
*Primary Examiner*  
*Art Unit 2872*

